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Editor - Captain L. B. Marshall, MC, USN (RET)

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Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve Medical officers now on active duty who desire to submit requests for extension of active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

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Penicillin Prophylaxis of Gonorrhea

BuMedInst 6222.3B of 25 October 1954 has been interpreted by many as prohibiting the use of oral penicillin for the prevention of gonorrhea. This interpretation is incorrect. Medical officers are at liberty to use this chemoprophylaxis as they desire and should not refuse it to those who request it only on the basis of this instruction.

For the reasons set forth in that instruction, major emphasis on the prevention of venereal diseases should not be focused on chemoprophylaxis, since oral penicillin has been shown to be effective only in the prevention of gonorrhea, whereas the real Medical Department problem is bound up with other venereal diseases.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

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Biological-Medical Considerations in Atomic Defense

Atomic radiations, whether they arise from nuclear weapons, from radioisotopes or radium, or from radiation-producing machines, share one distinctive property: During the process of absorption in the body, they all interact with tissue by splitting atoms and molecules into pairs of electrically charged fragments called ions.

The remarkable effectiveness of atomic radiations in causing biological injury stems from their property of acting directly on the individual atoms and molecules composing tissue. By their ionizing effect, radiations may eject electrons from atoms, break up chemical compounds, displace atoms in organized molecules, generate toxic substances and, in general, cause important changes in the submicroscopic structure of body cells.

The specific injury produced by radiation in any given circumstance probably depends on many variable factors, such as the density of ionization, the kind of tissue irradiated, and the kind or location of the molecules affected. Observed injuries include the mutation of genes, inactivation of enzymes, inhibition of cell division, and fatal disturbance of tissue functions.

So far as it known, there are four possible results of exposing a living cell to radiation. The cell may be killed. It may be crippled transiently or permanently, or it may merely have nonessential molecules ionized and, therefore, actually not be harmed at all by the radiation. Symptoms of radiation injury (skin erythema, radiation sickness, decreased fertility) appear in an individual only after a sufficient number of cells have been injured or killed. Unless the exposure has been sufficient to cause skin erythema, there may be no immediate external warning that a sublethal or even a minimum lethal dose of radiation has been received. Some changes appear early. Others may be seen only after prolonged periods of latency. Evidence of injury from minimal doses of radiation may not show up for months or even years.

The recognizable changes produced in cells by radiation are of many sorts. They include changes in permeability of the cell membrane, changes in the staining characteristics of cells, changes in viscosity of the protoplasm, changes in chromosomes, swelling of cellular components, production of abnormal cell divisions, distortion of cell structure, and many more obscure but measurable changes.

Each of the human body's many different tissues responds differently to radiation exposure. The responses, in general, are a summation of the responses of the various cells and cell types composing the specific tissue.

Rapidly growing or metabolizing tissues are usually more sensitive to radiation than are quiescent tissues. Lymphocytic tissues (lymph nodes, tonsils) are more easily affected than are muscle or nerve tissues. Tissue cells in an organ are more easily injured by radiation than tissue cells grown in a culture.

Tissues so differ in reaction to radiation absorption that it is possible to classify them in a loose fashion according to the doses of radiation they will successfully withstand. The following list is based on the available data and represents the approximate response of tissues exposed to divided doses of roentgen rays generated at 200 kilovolts:

Highly radiosensitive (cells seriously injured or killed by doses of 600 roentgens or less): lymphocytes; bone marrow cells; sexual cells (testical and ovary).

Moderately radiosensitive (cells seriously injured or killed by doses of 600 to 3000 roentgens): salivary glands; epithelium of skin; endothelium lining blood vessels; bone (growing); epithelium of stomach and intestine; connective tissue; elastic tissue.

Radioresistant (cells show little damage unless dose exceeds 3000 roentgens): kidney; liver; thyroid, pancreas, pituitary, adrenal, and parathyroid glands; bone (mature); cartilage; muscle; brain and other nervous tissue.

Quite recently, the understanding has been that the organ systems most fundamentally affected are the central nervous system, the blood forming organs, and the gastrointestinal tract. Nerve tissues, for example, do not recover from injury as do many other tissues.

The blood forming organs, the skin, the membranes lining body cavities, and the secreting glands may regenerate completely and resume their normal functions. Muscle, brain, and portions of the kidney and eye cannot regenerate; repair of them results only in scar formation. Even those tissues that can regenerate may fail to respond after repeated ionization and so cause conditions such as nonhealing ulcers or aplastic anemia. Also, repeated regeneration may produce cancerous conditions: epitheliomata, fibrosarcomata, or leukemia. There are no constant clinical symptoms which can be relied upon to warn of latent radiation injury before the late changes become manifest.

Not only is there marked variation in radiation sensitivity of different kinds of cells and tissues within an individual; there is also some variation in the radiosensitivity of individuals of the same species and even more variation among different species.

Experimental observations of many different species indicate that radiations induce an aging and debilitating effect. Each roentgen of exposure probably shortens life expectancy of an animal by about one ten thousandth. This implies that an exposure rate of 0.4 milliroentgen equivalent physical per day (about what man receives from cosmic and other naturally occurring radiation) may shorten the expected life span of a human being by about 4 weeks if the effect of radiation in man is like that in animals; or 50 roentgens of exposure may shorten the expected human life span by as much as 18 weeks. Also, radiation exposure induces an increased susceptibility to infection.

In every discussion of the effects of ionizing radiations, one of the first questions put to the physician is, "Will it make me sterile?" In response, the physician usually finds it necessary to distinguish between potency and fertility. No direct effects on potency have been reported. Fertility has been affected.

Permanent sterilization of the human female requires 400 to 600 roentgens delivered to the ovary. Sterilization of the human male can be produced by 800 to 1000 roentgens delivered to the testes. Either of these doses, given as whole-body radiation, would probably be lethal to the individual, and, therefore, danger of causing permanent sterilization by single whole-body exposures becomes a theoretical rather than a practical question. Reduced fertility and temporary sterility have been induced in human beings by single exposures of 200 to 300 roentgens to the gonads and in animals by repeated exposures of as little as 1 roentgen per day for a number of weeks.

A few years ago, a survey found that the average number of children born to a group of radiologists was 1.7, whereas the average number of children born to a comparable group of physicians not engaged in roentgenology was 3. Inasmuch as the major difference between the two groups of physicians, so far as could be determined, was the practice of roentgenology, these data may indicate a reduction in human fertility from repeated exposure to relatively small doses of x-rays.

Genetic or hereditary changes may arise from doses of radiation much smaller than those needed to affect fertility. Many genetic experts believe that any amount of ionizing radiations may produce hereditary changes cumulative throughout the lifetime of the germ plasma line that can and will appear in future generations. There is, however, no current evidence that radiation workers (x-ray technicians, radiologists, atomic workers) who have not abused the maximum permissible dose limits, have produced offspring differing from those of the general populace.

Specifically, from the human genetic studies being made of the completed pregnancies among the surviving victims of the atom bombings at Hiroshima and Nagasaki, at least one positive finding has been reported. The expected normal male-female ratio has been upset among offspring of women exposed within 2000 meters of ground zero (the point immediately beneath the exploding bomb) by a statistically significant decrease in male births.

Ionizing radiation can alter the genes in the body (somatic) cells and in the reproductive (sexual) cells and so cause them to grow or reproduce abnormally. If a gene change occurs in a sexual cell, a mutation will occur in later generations, provided that the cell is used in reproduction. If a gene change occurs in a cell of growing or regenerating somatic tissue like skin, liver, bone, or bone marrow, it may cause cancerous or other harmful changes in the exposed individual.

Among atomic bomb casualties there will be many with multiple injuries. Dual or triple modes of injury may be the rule rather than the exception. Victims may have burns, traumatic injuries, and radiation injuries in any combination. Prognosis in each case will depend on the types and extent of the injuries. Those with radiation injuries in addition to more orthodox injuries will tend to have a graver prognosis than those not having radiation injuries.

Radiation exposure incurred from the atomic flash is practically instantaneous. That from radioactive fallout, because of the rapid decay of this material, should be thought of as being suffered within a quite short time span: More than 80% of the radiation dose from atomic debris will be delivered within 10 hours of the explosion time. The radiologists state that radiation exposures delivered over a time span of minutes or hours may be thought of as having effects identical to an instantaneous exposure of the same roentgen value. On the other hand, exposures incurred over a period of days or months have less total biomedical effect on the body as a whole than would the same cumulative roentgen dose if it were delivered over a period of only hours or minutes.

There are no known specific agents for the treatment of radiation injury. There are no practical prophylactic drugs to temper or avert radiation injury consequent to adequate exposure to radiation. Medical research is continuing in an effort to discover and develop better means of diagnosis, prophylaxis, and treatment for the victims of all types of radiological hazards, including atomic attack.

The recommended therapeutic measures for radiation sickness and its sequelae are almost exclusively symptomatic or supportive in nature. They include:

1. Bed rest plus sedatives to reduce stress demands on the body economy.
2. Therapy to improve nutrition and maintain fluid and mineral balance.
3. Measures to reduce or prevent infection: antibiotics; aseptic techniques in nursing and medical care with emphasis on mouth and skin hygiene; leucocytic cream.
4. Antishock drugs.
5. Antihistamines (on the theory that shock is precipitated or made worse by histamine produced by the radiation-injured tissues).
6. Antigastric secretants and antinauseants.
7. Antihemorrhagic drugs.
8. Miscellaneous drugs, such as glucose, glucose-saline injections, cholesterol, liver preparations, numerous vitamins, alcohol, insulin, corpus luteum hormone, Congo red desoxycorticosterone acetate (DCA), and ACTH.
9. Blood transfusions.

(Williams, E. G., Ingraham II, S. C., Biological Medical Considerations in Atomic Defense: Pub. Health Rep., 71: 174-180, February 1956)

Thoracic Pain in Cardiovascular Disease

Thoracic pain of cardiovascular origin may result from myocardial ischemia, pericardial irritation, or certain diseases of the aortic arch system when several mechanisms of producing pain may come into play. Many other types of pain occur in, or are referred to, the thoracic region, so that the same patient may experience several types of pain. For example, he may experience pain because of coronary insufficiency, gallstones, or an esophageal hiatal hernia; he may have musculoskeletal pain in various parts of the thoracic cage.

Pain of myocardial ischemia, namely, angina pectoris, is most frequently caused by disease of coronary arteries, but it may be caused by aortic insufficiency or stenosis due to valvular aortic disease including syphilitic aortitis.

The character of the pain of myocardial ischemia is essentially the same regardless of the cause of the ischemia. The duration and intensity of the pain, however, vary under the different circumstances in which angina pectoris occurs.

Angina of Effort. The chief characteristics of angina of effort are:

1. Its onset and cessation are related respectively to increase and decrease in cardiac work. Increase in cardiac work occurs during physical exertion, as a result of excitement, after eating a meal, and in cold weather.

2. The typical distribution of the pain is retrosternal, not precordial. In most cases, it tends to appear in the midline behind the sternum, in the epigastrium, or in the throat, and to spread centrifugally. It may extend into the ulnar side of the left arm, less often to both arms, to the right arm alone, or into the lower jaw. Occasionally, it starts in the arm or arms and spreads centripetally to the regions just mentioned. The pain may be felt only in the wrists or only in the upper part of the abdomen.

3. The onset of the attack is abrupt and its duration is short. It usually lasts less than 5 minutes. A small percentage of patients do describe their pain as precordial, that is, in the left anterior portion of the thorax, but all the other criteria mentioned, especially the relation of pain to effort, hold true.

4. Vasodilating drugs such as glyceryl trinitrate and amyl nitrite terminate the pain more quickly than rest alone, and at times the response of thoracic pain to these drugs is helpful in differential diagnosis.

5. Provocative tests may be resorted to in doubtful cases in the differential diagnosis of thoracic pain. The exercise test has almost completely replaced the hypoxia test in this regard, but with either method, production of the patient's pain or significant electrocardiographic changes, or both, may be of great help in the differential diagnosis of thoracic pain.

Angina Associated with Myocardial Infarction. The pain resulting from acute coronary occlusion with myocardial infarction has all the

characteristics of angina of effort. It is, however, more severe and more prolonged in most instances; it is not so readily relieved by vasodilating drugs; it may occur while the patient is at rest or even in the course of sleep.

The symptoms of myocardial infarction vary from mild attacks of "acute indigestion" to severe seizures. The mild attacks, called "acute indigestion," are really episodes of anginal pain which is referred to the epigastrium or lower part of the sternum; they last 15 to 30 minutes and gradually disappear. The severe seizures may last many hours and may be associated with all the signs of severe shock. In other cases, the attack is represented by an episode of severe dyspnea, with or without evidence of acute left ventricular failures, and with complete absence of pain, or at the most, a mild sense of burning. Except in the milder attacks, the patient usually looks anxious, as in all vascular occlusions, perspires freely, has an ashen color and a decrease in the blood pressure. Occasionally, the blood pressure is elevated at first, and later drops. The last is a peripheral vascular phenomenon associated with shock. The heart sounds often reveal nothing significant although, at times, they may be fainter than before; gallop rhythm may be present and, in a few cases, ectopic rhythm develops. Frequent extrasystoles may precede such an episode of ectopic rhythm.

In the succeeding hours, moderate temperature and leukocytosis develop; the sedimentation rate begins to be accelerated after 24 hours, although this may be delayed for days. If the anterior surface of the left ventricle is involved, a pericardial friction rub may appear. This finding indicates localized pericarditis over the site of the infarct. The duration of the symptoms of shock varies with the severity of the attack and with the response to treatment. The temperature tends to become normal after a few days.

Electrocardiographic manifestations indicative of acute myocardial infarction may be present shortly after the onset of the attack, or they may be delayed for many days.

The pain of pericardial irritation is one of the classical manifestations of acute pericarditis. Pericarditis, however, may occur without pain. It may occur as a complication of pneumonia and septicemia or as part of the clinical picture of rheumatic fever, tuberculosis, disseminated lupus erythematosus, myocardial infarction, or uremia. Another type of pericarditis, spoken of as "nonspecific pericarditis," may occur without any specific demonstrable etiologic factor. This type of pericarditis frequently develops shortly after an infection of the upper part of the respiratory tract and eventually ends in complete recovery.

The pain of pericarditis may be spread over the whole thorax or it may be localized in the substernal, pericardial, epigastric, or intrascapular regions. It may extend into the neck and occasionally into the arms. It has been described as "aching" or "squeezing" and is characteristically

aggravated by breathing, coughing, twisting of the torso, and swallowing. The presence of pericarditis is further corroborated by the presence of a pericardial friction rub, by certain roentgenologic and electrocardiographic findings, or by recognition of the primary disease responsible for it; it should be recalled, however, that in so-called acute nonspecific pericarditis, no evidence of a primary disease can be demonstrated.

The roentgenologic finding most suggestive of pericarditis is increase in the size of the cardiac silhouette. This may be attributable to increase in the quantity of pericardial fluid, to cardiac dilatation, or to both factors.

Pain may result from valvular aortic disease, including syphilitic aortitis. Two other types of pain arising from aortic disease, however, require special mention.

Pain from a Dissecting Aneurysm of the Aorta. Pain resulting from a dissecting aneurysm of the aorta may be indistinguishable from that owing to coronary occlusion. Aneurysm, therefore, can be suspected if repeated electrocardiograms remain unchanged after attacks which clinically have the hallmarks of myocardial infarction, especially if the pain is referred to the upper thoracic vertebrae, and if there is roentgenoscopic evidence of progressive changes in the configuration of the aortic arch. The occurrence of transient neurologic signs and symptoms among patients who have prolonged attacks of anginal pain is further strongly suggestive evidence of dissecting aneurysm of the aorta.

Pain Associated with Large Aneurysms of the Aorta. Large aneurysms may cause pain by eroding adjacent bony structures, such as the sternum, ribs, or thoracic vertebral bodies, by pressure on nerve roots, and by displacement of intrathoracic viscera. Fortunately, aneurysms of the aorta rarely are seen nowadays because syphilis, one of their frequent causes, is now effectively treated in its early stages.

The pain resulting from erosion of bone is persistent and may be distressingly severe. In the process of erosion, nerve roots are exposed, and pain results in the distribution of the involved nerve root; characteristically, the pain is worse at night. Dysphagia represents the type of pain resulting from displacement of, and obstructing effects on, the esophagus. The diagnosis of large aneurysm usually is obvious from roentgenograms of the thorax and from the mechanical effects of the aneurysm itself.

Angina pectoris, the commonest and certainly the most important type of thoracic pain associated with cardiovascular disease, is usually readily identified and distinguished from other types of pain by its characteristic distribution and its strict relation to increased cardiac work.

Esophageal pain and pain associated with diaphragmatic hernia may closely simulate angina pectoris; root pain of cervical and upper thoracic origin is mistaken for anginal pain; biliary colic, acute pancreatitis, and perforation of abdominal viscera have been mistaken for acute myocardial infarction. Spontaneous mediastinal emphysema can simulate acute myocardial infarction very closely. Clinically, the syndrome is characterized

by substernal or precordial pain which, when it begins suddenly and extends to the left shoulder, into the neck, or down the left arm, is easily mistaken for acute myocardial infarction. A peculiar crunching sound is heard over the precordium during both phases of the cardiac cycle. A positive diagnosis can be made by the roentgenographic demonstration of the presence of air in the mediastinum and by the absence of other evidence of myocardial infarction.

Various local conditions of the thoracic wall, such as myositis, and arthritis of the spinal column are only too frequently labeled coronary disease. Skeletal and muscular pain may be brought on or aggravated by effort, but they are not so closely related to exertion as is anginal pain. Skeletal and muscular pain caused by effort tend to last much longer than angina from effort lasts ordinarily. Use of the upper extremities, furthermore, is more likely to cause skeletal and muscular pain than is walking. Finally, when a patient complains of rheumatic types of pain, evidence of a similar disturbance elsewhere frequently may be found. The muscles about the shoulder girdle and the tissues overlying the sacroiliac joints should be palpated carefully to detect the presence of tender fibrositic nodules. Musculoskeletal pains about the thorax frequently extend into either or both arms, a fact that is frightening because most laymen seem to believe that pain which extends in this fashion is always caused by cardiac disease. (Dry, T.J., Thoracic Pain in Cardiovascular Disease: Proc. Staff Meet. Mayo Clin., 31: 10-15, January 11, 1956)

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Artificial Pneumoperitoneum

Because the proper place of pneumoperitoneum in pulmonary tuberculosis has been held in question by many, the authors have attempted through this study to evaluate their experience with the procedure on the Tulane service of Charity Hospital of New Orleans. There are staunch advocates of its use in nearly all cases of tuberculosis, and there are still other physicians who have given it a trial and discarded it in favor of surgical procedures.

In the treatment of pulmonary tuberculosis, it is well to remember that there will always be some patients who will recover no matter what form of therapy is used and pneumoperitoneum in such cases will almost surely help the majority. On the other hand, there will be those patients referred to as "last resort" cases, who are clinically and roentgenologically far advanced, and in whom other types of collapse therapy (especially pneumothorax) or surgery are contraindicated, and in most of them pneumoperitoneum is surely doomed to fail. Therefore, in the evaluation of the procedure, it is essential to take into consideration a number of variables,

namely, type of lesion (exudative, fibrotic, mixed), extent of lesion (minimal, moderately advanced, far advanced), location (upper one-third, lower two-thirds, or both upper and lower areas), duration of treatment and supplemental therapy.

Of 173 cases who received pneumoperitoneum, only 90 (52%) were considered complete enough for evaluation and analysis. The remaining 83 were considered incomplete because of lack of follow-up after hospital discharge or inability to locate the roentgenograms of the hospitalization period. These 90 cases were treated with pneumoperitoneum alone, or with pneumoperitoneum and phrenemphraxis either with or without antibacterial drugs.

The range of use of pneumoperitoneum was fairly broad and the indications were: (1) definitive therapy, (2) pneumothorax failure, (3) tuberculous pneumonias, (4) holding procedure until surgery became advisable, and (5) last resort.

Those cases of minimal, moderately advanced or far advanced cases in which pneumoperitoneum was used as a definitive method of treatment comprised that group in which the hospital staff felt pneumoperitoneum was the method of choice of all forms of therapy. The pneumothorax failure group is self explanatory. The group of tuberculous pneumonias is not included in this study and has been reported separately. Those cases of unilateral cavitory disease where surgery was indicated, but the patient's condition did not allow the procedure at that time, were given pneumoperitoneum as a temporizing or holding procedure, usually for at least 8 to 12 months. These cases comprise the fourth indication. The last group embraces those with far advanced, bilateral cavitory disease where surgery is inadvisable due to low pulmonary reserve or poor risk, and where other forms of collapse therapy are contraindicated. In this last group, pneumoperitoneum was actually used as a "last resort" procedure for the sake of offering the patient something in addition to bed rest. The authors do not advise administering pneumoperitoneum routinely in all such cases, but these last ones were so grouped in order to evaluate the effect of pneumoperitoneum.

The over-all results of pneumoperitoneum were classified as improved (inactive or arrested NTA classification 1950), active (retrogressing), active (progressing), or dead. The criteria used for improved were (1) all cavities closed; (2) sputum converted to negative by concentrate (arrested) or by culture (inactive). The active group included those which did not fulfill the requirements for the improved group, and in which the lesions were retrogressing or progressing. Retrogression implied closure of some, but not all cavities, reduction in cavity size, extensive clearing of the pulmonary infiltrative lesion, and sputum which was either negative or positive. Progression implied that there was no benefit to either the cavities or the infiltration, that the lesion had increased in extent, and the sputum was usually positive.

The duration of pneumoperitoneum in all of the 90 cases varied from 3 to 60 months. In 8 cases, the duration of pneumoperitoneum was less than 9 months and all had unfavorable results. Seven are dead and pneumoperitoneum was used in all as a last resort. One case is active progressing; in this case pneumoperitoneum was used as a definitive measure. The average duration of pneumoperitoneum in the improved group was approximately 2 years (23.7 months). It was noted in those in whom improvement was to be found that clearing of the exudative component and closure of the cavities appeared within 8 or 9 months (average 8.6 months) after the induction of pneumoperitoneum. It was apparent that by that period of time one could form an opinion as to whether the disease process was actually responding to treatment. It is felt that once pneumoperitoneum is begun it should be continued for at least 9 months before deciding to abandon it. The average time for conversion of the sputum to negative was 11.4 months after initiation of pneumoperitoneum.

Pneumoperitoneum was apparently a safe and easy procedure in this series. Complications were few and of seemingly little consequence. Abdominal discomfort was occasionally noted, but to no great extent. The only complication of real significance was ascites which occurred in only 5 of the 173 cases.

Pneumoperitoneum proved to be of definite value with regard to cavity closure and its therapeutic effectiveness was enhanced by antibiotics. (Cabiran, L. R., Goldstein, N., Artificial Pneumoperitoneum in the Treatment of Pulmonary Tuberculosis: A Clinical Study: Dis. Chest, XXIX: 202-212, February 1956)

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The Nonhospitalized Tuberculosis Patient

Changing emphases and concepts in the tuberculosis problem in the United States have given rise to a variety of assumptions not supported by valid evidence. The paucity of precise evidence concerning the characteristics and status of tuberculosis patients, who are not hospitalized, has permitted unsubstantiated conjecture so conflicting in nature as to limit the effectiveness of program planning. The Public Health Service has, therefore, undertaken to provide statistical data that will reliably describe the current status of known nonhospitalized tuberculosis patients in sample areas of the continental United States, so that health departments and other tuberculosis control agencies may have a foundation of specific information on which to construct plans for the effective use of funds, facilities, and operations.

The purpose of this study is to observe the characteristics of non-hospitalized tuberculosis patients who are in need of intensive public health supervision and to give information on the types of care and services given them.

By means of sampling techniques, 37 areas of the United States were selected. Together, these areas constitute an unbiased sample census of the number and status of known nonhospitalized cases for the United States as a whole. The nation was divided into three population groups and further subdivided into areas of suitable administrative size ranging from 50,000 to 600,000 population. For the largest cities, a part of a city constituted an area. In sparsely settled regions, four or more counties combined to make an area.

For purposes of analyzing the latest status of disease activity, the cases were divided into three activity groups: (1) active and probably active, seen in past year; (2) presumably active, current activity status indeterminate; (3) arrested or inactive, with drugs prescribed.

According to the latest information at the time of the study, 55% of the significant case load was hospitalized; 45% was not hospitalized. Plainly, this situation has many implications for health departments and other agencies. Certainly, the community has as great a responsibility for those cases outside hospitals as for those that are hospitalized. Because of the attendant difficulties involved in supervising patients who are not in institutions especially designed for their care, medical, nursing, and social services will be particularly challenged. Health departments will be additionally concerned about the chances of spread of the disease because of the presence of active cases in their communities.

By means of sampling techniques, 37 areas of the United States were selected. These areas had a total population of almost 7 million and constitute portions of 24 states.

Roughly, one-half (55%) of the significant case load is in hospitals, and, roughly, one-half (45%) is at home. Of those at home: (1) Three-fourths have been known to health departments for less than 5 years. (2) One-half are 45 years of age and older. (3) In the age groups over 35, there are more than twice as many males as females. (4) Eighty-seven percent are in advanced stages of disease. (5) Sputum status is unknown in almost one-half. (6) One-third are reported as under care of private physicians. (7) Forty-four percent of active cases have had drugs recommended; 40% of active cases have had neither drugs nor bed rest recommended. (8) Three-fourths of all cases had a history of previous hospitalization. (9) Almost one-half of all cases in the study were discharged from hospitals against medical advice. (10) For one-fourth of active cases, the supervising agencies were unable to obtain information about recommendations for hospitalization. (11) Two-thirds of the patients were not hospitalized because of medical, personal, and family preferences.

The availability of clinic, public health nursing, and social services is directly related to density of population; in rural areas, almost one-half of the study population had no clinic services; 10% had no public health nursing services; 80% had no social services other than financial assistance

as provided by departments of public welfare. (Blomquist, E. T., The Nonhospitalized Tuberculosis Patient: Am. J. Pub. Health, 46: 149-155, February 1956)

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Acerola Juice

The juice of the Puerto Rican cherry has from 50 to 100 times the vitamin C content of orange juice (4000 mg. per 100 ml. compared with 40). It can be taken as a natural juice, or because of its very high vitamin C potency, it can be used to blend with any juice, food, or liquid that contains little or no vitamin C. It could be valuable in any disease requiring large doses of vitamin C. The potentialities are unlimited for its use as a valuable food supplement as well as to enrich by blending with any low vitamin C product.

This study was made to determine the value of acerola juice as a source of ascorbic acid (vitamin C) in the diet of normal infants.

The Puerto Rican cherry or acerola grows semi-wild and is native to tropical and subtropical America, especially in the Caribbean area. Because of its favorably physical characteristics, it lends itself to intense cultivation and industrialization. The acerola is a small tree or shrub 4 to 10 feet high. The fruit is a pseudo-cherry not related to the classical cherry (prunus). The tree has waxy green leaves, white and orchid colored blossoms and bright "cherries" when ripe. The fruit is fleshy and drupaceous. The cherry weighs between 7 and 12 gm. and measures approximately 2 to 3 cm. in diameter. The fruit contains from 1 to 3 gm. of ascorbic acid per 100 gm. or 1 to 3% of the edible matter. The green fruit contains more ascorbic acid than the ripe—frequently twice as much. The juice has a reddish orange color and an agreeable tart taste. The average cherry contains 53 to 70 mg. of vitamin C. It requires from 11 to 25 cherries to supply 100 cc. of juice which contains from 1400 to 2000 mg. of vitamin C.

Thirty infants were studied for a 12-month period, May 1954 through April 1955. Their ages varied from 1 to 6 months when the acerola juice was started as their only form of vitamin C. There were three premature infants. The special acerola blended juice was fed to two classes of infants: (1) normal newborn infants who were started on the acerola vitamin C at 1 month of age; and (2) infants under 6 months who were either clinically allergic to orange juice or who had some previous allergic manifestations such as eczema, pylorospasm, or severe colic (i. e. mild allergy).

It is common knowledge among pediatricians that orange juice is probably the most frequent allergic sensitizer of any food used in early infant feeding. As a consequence, in many cases, especially in allergic families, parents are advised not to use orange juice until the baby is 9 or

10 months old. At this time, the infant appears to develop an immunologic immunity to some of the common foods. This product is also useful for those who dislike orange juice or cannot take it for one reason or another.

Acerola is the richest known source of vitamin C, having from 50 to 100 times the ascorbic acid content of orange juice. Thirty infants, ranging in age from 3 to 7 weeks were given acerola juice as the only significant source of ascorbic acid in their diet. All infants showed average or better growth and development for their age and weight. Ascorbic acid levels in the blood plasma of all infants were above average after the acerola juice was introduced into the diet. No reactions occurred from ingestion or from skin and intradermal tests with acerola juice. Acerola juice can be blended with apple juice which is naturally low in vitamin C, and is used to satisfy the ascorbic acid requirements in infant feeding. It is particularly valuable in infants who are allergic to orange juice or where the family allergic history deems it advisable to delay giving orange juice until one year of age. (Clein, N.W., Acerola Juice—The Richest Known Source of Vitamin C: J. Pediat., 48: 140-144, February 1956)

* * * * *

Lumbar and Sacral Compression Radiculitis

This study is concerned with certain back injuries, having to do with ruptured intervertebral disks as well as the compressive radiculitis in the same area, that were admitted to the neurosurgical service of the Boston City Hospital during the 17 years, 1937 - 1955. The total number of patients was 545 ranging in age from 15 to 68 years. There were 402 men and 143 women; 124 patients had had multiple admissions, the greatest number per patient being 14.

The possible causes of the injuries resulting in a compressive lumbar radiculitis, and commonly associated with ruptured lumbar or lumbosacral disks, are legion. They range from no known cause through athletics, jujitsu, and post-partum back strain, to getting into or out of bed.

It is apparent from this analysis that, while almost any bodily activity can produce back alterations that lead to compressive radiculitis, the commonest causes and, therefore, the ones that should raise a suspicion of such an injury in the surgeon's mind, are lifting, a fall, and "no cause."

It is well known that, in the opinion of many surgeons, it is possible in the group in question, to make an accurate unaided clinical diagnosis of the pathology present and requiring therapy. This is done without such mechanical aids as a myelogram, and such a diagnosis will commonly be described as an extruded or protruded ruptured intervertebral disk. This is not in accord with the experience of the authors. Roughly, one fifth of their cases without ruptured disks showed the same signs and symptoms

that are commonly found in ruptured 4-5 lumbar and lumbosacral disks. The only significant exceptions were patients with pseudarthrosis of the spinous processes and the patient with the thrombosed caudal vein.

This diagnostic unreliability of clinical signs and symptoms has been pointed out previously. As a result of this experience, the author believes that the patient with such suggestive signs and symptoms should be given the benefit of every appropriate diagnostic procedure and in many instances should be offered an exploratory diagnostic operation after a period of proper conservative therapy if he is still disabled by his symptoms, and particularly if he has had a previous so-called disk operation. The frequency with which a previous operative scar, a tight dural sheath or root canal, or a narrowed spinal canal (all virtually unrecognizable except at operation) have been found to be the sole cause of the original or recurrent symptomatology is too great to be disregarded. As a corollary to this, it is essential to determine during the operation by palpation with an angulated instrument inserted intradurally into the sheath or extradurally into the root canal whether or not either of these structures is the proximate cause of any compressive radiculitis whether they exist alone or in conjunction with an actual protrusion or extrusion of a nucleus pulposus.

There can be no doubt that patients, complaining of low back pain whether classed as industrial or nonindustrial injury, should be given the benefit of a long enough period of conservative nonoperative therapy so that the physician in charge can be relatively sure that relief of symptoms and invalidism cannot be cured without operation. Such measures as bed rest, traction, hyperextension of the spine, massage, manipulation, injection of Novocain or its derivatives into spastic muscles, judicious exercise, muscle stretching and muscle building must be given a fair trial. A careful hospital study of other possible causes, such as spondylolisthesis, pseudarthrosis of spinous processes, hernias through the lumbar fascia, tuberculosis, flat feet as well as bad posture, tumors, congenital defects and so forth, must be carried out and the patient's treatment appropriately modified so that these causes can be ruled out. Only then can one properly decide to operate on such a patient for a ruptured disk or a compression of a root or roots.

In the author's experience, the convalescent care of patients that have been adequately operated upon for compressive radiculitis is as important as the operation insofar as remission of invalidism and return to work are concerned. There can be little dispute with the point of view that in such patients the paraspinal muscles before operation are in spasm and anatomically shortened. They have a varying degree of atrophy of disuse and are, therefore, weak. The supporting vertebral ligaments are required to do more than they were constructed to do and back motion is splinted and painful. There is almost always present the continuous nagging pain of an irritated compressed spinal root with resultant concentration of the patient's attention on this rather than his work. Finally, virtually complete invalidism

and lack of muscular effort with a high degree of psychoneurosis develops. This is heightened further by the fact that almost always he has had attacks similar to the one that led to the operation, but has previously recovered from them even though the doctors offered no effective therapy and often insisted that he waste time, effort, and money in treatment that he was convinced was useless—an opinion that had been borne out by his experience through the years. In short, these conditions require postoperative convalescent therapy which must first stretch and strengthen the shortened weak muscles locally, must simultaneously provide a method of rebuilding the body and its more active functions generally, and finally, must do so by the patient's own efforts. Only in this way, will the patient be persuaded to be cooperative and intelligent about his problem and at the same time have no one to blame or to provide an alibi in case of failure except himself. Only thus, can permanent invalidism, neurosis, and a whole train of similar disabilities be done away with.

Along with this positive point of view, there is an equally important negative attitude. Certain procedures must not be carried out on these patients. The more important are: no formal exercise while the patient is bed ridden after operation. There is too much danger of unrecognizable deep hemorrhage with a resultant scar. Patients must not get out of bed later than 8 or 9 days, but must then start active ambulation; they must not be discharged from the hospital until they can walk up and down two flights of stairs in succession. Their formal convalescent regimen must not be started until after they have been home for two weeks. Light therapy, diathermy, massage, passive and assisted active motion, whirlpool or other baths and synthetic exercise in any form are not only contraindicated, but in the author's experience, have been definitely harmful. If any local muscle-building exercises are needed, they must be done by the patient himself in such a way as to mimic normal functional use and activity.

After two weeks at home, the patient should report to his surgeon. The latter can then outline a convalescent regimen that will meet the fundamental requirements stated above. The author accomplished all that is necessary along these lines by explaining to the patient that to stretch his shortened, still spastic muscles he must bend at his waist forward, backward, and to either side ten times every morning right after he gets out of bed. More bending than this is harmful and less is ineffectual in any 24-hour period, provided that at each bend the patient goes far enough to feel his back and thigh muscles stretch, that he keeps his knees straight and holds his hands on his hips. He is also told to take walks which must be gradually increased in length until he is walking 5 miles twice every day. These walks must each be of such length that the patient is not exhausted, but does feel that he has had definite progressively greater and greater exercise.

The patient should report to his surgeon not oftener than once in every two or three weeks, and should be physically in condition to return to work in 8 to 10 weeks after leaving the hospital. He should develop no neurotic tendencies and should be willing, and will be physically able, to do any kind of job that does not require lifting, jumping, pulling, pushing, or working with his back in a strained unnatural position for even relatively short periods. These limitations will apply for the rest of his life at work and at home. They are designed to prevent recurrence of any condition that can produce a compressive radiculitis, to prevent the redevelopment of spasm in any of the bodily musculature and to make the patient personally responsible for his own recovery and welfare and, thus, deprive him of the opportunity of using alibis provided by others, and yet prevent him from being put, or from putting himself, into such positions as have already been demonstrated to be unfavorable to his physical welfare. It should be repeated that this convalescent treatment is predicated on the assumption that the previously compressed root or roots have been decompressed. If they had not been, no variety or amount of convalescent therapy will relieve the patient of his symptoms, stop his invalidism, or return him to gainful labor. (Munro, D., Lumbar and Sacral Compression Radiculitis - Herniated Lumbar Disk Syndrome: New England J. Med., 254: 243-251, 9 February 1956)

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Gastric Polyps and Adenomas

The establishment of adequate information on the relationship of the precursor lesion, gastric adenoma, to gastric cancer should be one of the essential steps in lowering the death rate from gastric malignancy. The elimination of these lesions requires gastrotomy, partial gastrectomy, or even total gastrectomy. Often, the decision for operation is based on symptoms of obstruction or bleeding. More often, the lesion is found in the routine examination of patients without ominous symptoms and the decision for operation must be based on the probability of the polyp being malignant or becoming malignant. A single gastroscopic or roentgenologic examination may not be adequate to determine the probably benign nature of the lesion or even to establish the diagnosis of a probable adenoma as contrasted to a foreign body, hypertrophic gastritis, or leiomyoma.

Polyp is used to describe the lesions clinically diagnosed and adenoma to describe the lesions pathologically proved.

The group of patients previously reported have been traced for 5 additional years. The groups are presented as they were in the original report. Thus, Group I contains the patients treated by observation. The patients who have been operated upon in the 5-year interval will be noted and summarized.

The benign nature of gastric polyps is attested to by the fact that none of the patients with benign polyps developed symptoms of obstruction or bleeding during this 5-year period. The several operations performed were carried out because of the probability of malignant change.

The frequent association of benign gastric adenomas and gastric cancer, as well as the occasional finding of a malignant area in a benign adenoma, establishes the precancerous nature of gastric adenomas. Occasional cases have been reported where carcinoma was found in the location of a previous gastric polyp.

Earlier reports of the frequency of malignant change in large gastric polyps ranging from 9 to 40% were correct. However, because more roentgenographic and gastroscopic studies of the stomach are done in patients with mild symptoms, the small asymptomatic polyp is being recognized. The chance of malignancy in these is less. Only one of the 81 lesions less than 2 cm. in diameter was malignant while 6 of 14 lesions over 2 cm. in diameter were malignant.

The author's experience would indicate that a diagnosis of a benign polyp by the roentgenologist and/or gastroscopist is rather reliable. Repeat examination of the presumed benign lesions for growth, infiltration, or other signs of malignancy during the first year or so will minimize diagnostic errors.

The nonoperative or observation type of management is recommended in asymptomatic or mildly symptomatic patients with polyps less than 2 cm. in diameter which appear benign to the gastroscopist and roentgenologist. These patients are observed by roentgenologic or gastroscopic examination every 3 or 4 months for the first year, and then biannually. The probability of malignancy as indicated by an increase in size of the lesion, infiltration of the gastric wall, or increased nodularity and pallor of the surface of the lesion indicates the need for operative treatment.

The following groups of patients should be subjected to operation: (1) patients with polyps larger than 2 cm. in diameter; (2) patients with polyps smaller than 2 cm. in diameter in which the roentgenologist or gastroscopist suspects malignancy; (3) patients with clinical symptoms due to polyps if the symptoms are of a severity to justify the risk of operative intervention; and (4) patients who refuse, or are unable, to accept adequate observation because of geographic or personal reasons. (Hay, L. J., *Surgical Management of Gastric Polyps and Adenomas: Surgery*, 39: 114-118, January 1956)

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Thromboembolic Disease in Obstetrics and Gynecology

By the early diagnosis and adequate treatment of thromboembolic disease, several worthwhile objectives are achieved: reduction in the incidence of fatal pulmonary emboli; prevention of chronic venous insufficiency and its sequelae (edema, pain, varicosities, skin changes, and ulceration) and, finally, thromboembolic disease. This last point is of importance because of the emphasis that has been placed on the expense of anticoagulant therapy. With these objectives in mind, this survey of the 101 cases of thromboembolic disease, occurring in obstetric and gynecologic patients at the Temple University Hospital over a 3-year period, was undertaken. The incidence of thromboembolic complications following cesarean section and major gynecologic surgery was identical, 1.81%. Of these patients, 23 had some form of heart disease, 31 were obese, and 36 had varicosities of the lower extremities. Other contributing factors were anemia in 14, excessive blood loss in 17, and postoperative or postpartum infection.

Within certain limitations, anticoagulants are now regarded as the specific therapy for thromboembolic disease. It is not unusual, however, for anticoagulant treatment to be delayed until the signs and symptoms are "more definite" in the hope that the condition will subside spontaneously. It is well known that this delay exposes the patient to an increased danger of pulmonary emboli; however, the effects of this delay on the duration of the disease and the hospital stay tend to be overlooked. In order to determine the effects of this delay on the duration of the disease, and the length of hospitalization, the patients were divided into 3 groups on a basis of the time at which anticoagulant therapy was begun. Those cases in which there was no delay in diagnosis and in which anticoagulant therapy was begun immediately were placed in Group I. Those in which there was a delay of from 1 to 2 days in initiating treatment were placed in Group II, and Group III included all cases in which treatment was begun more than 2 days after the initial symptoms. The duration of the disease was determined from the time of the first sign or symptom to the absence of any objective signs of disease activity. Because of insufficient data, only 67 of the 101 cases are included. The cases are almost evenly divided between the two services.

Because the early diagnosis and initiation of active adequate therapy are important, some of the aspects of diagnosis and therapy in obstetric and gynecologic patients must be discussed since they may differ somewhat from those in the medical or general surgical patient. In these patients, tenderness over the involved veins was the one most reliable diagnostic sign. The most frequent site of tenderness was the middle third of the calf, although the femoral and pelvic veins were frequently involved. The femoral vein can be isolated just medial to the pulsation of the femoral artery in Scarpa's triangle and the tenderness here is practically pathognomonic of femoral thrombophlebitis. Occasionally, the physician is lulled by the

absence of fever, yet 23 patients had no temperature elevation either at the onset or during active recurrences of the disease. Six of the ten pre-natal patients were in this group. The time of onset was variable, averaging 5.5 days following operation or delivery; 40 cases began within the first four postoperative or postpartum days.

The diagnosis of pelvic thrombophlebitis was especially difficult and was often delayed. The lesion was usually recognized after failure of response to therapy for endometritis, parametritis, cellulitis, or pelvic peritonitis. Nine of the thirteen patients with pelvic thrombophlebitis had one of the above infections, but despite antibiotic therapy the fever subsided only after an adequate level of anticoagulants was obtained.

The fundamental principles of therapy consist of treatment directed toward prevention of the propagation and dislodgment of the clot. These are accomplished by attacking the clotting process with the immediate administration of Heparin and Dicumarol and by increasing the circulation of the blood in the extremities with the Trendelenburg position. In addition to the anticoagulant therapy, antibiotics should be administered.

When pain is severe, paravertebral block usually gives dramatic relief; procaine (0.5 gm. in 500 cc. fluid) intravenously given over a 20-minute period is less effective and of shorter duration. Spinal anesthesia is inferior to either; although it relieves the pain temporarily, it causes muscular paralysis and pooling of blood in the lower extremities, thereby increasing stasis. Neither paravertebral block nor spinal anesthesia should be used, however, after anticoagulant therapy has been initiated.

When the symptoms begin to subside, the patient should begin active leg exercises, but should remain in bed until the signs and symptoms are absent, the temperature is normal for a 24-hour period, and the anticoagulant level is adequate. If edema is present on arising, an Ace bandage is applied. Heparin, when used alone, must be continued in therapeutic amounts at least for 24 hours after ambulation and in decreasing amounts for 2 or 3 days. Dicumarol should be continued in therapeutic dosage approximately 5 to 7 days after ambulation and in slowly decreasing amounts thereafter for a total of 3 to 4 weeks of treatment. Once the patient's response to Dicumarol is evaluated in the hospital, it can be continued with relative safety after discharge with regular prothrombin checks. (Burns, W.T., Thromboembolic Disease in Obstetrics and Gynecology: Am. J. Obst. & Gynec., 71: 260-265, February 1956)

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Please forward requests for change of address for the News Letter to:
Commanding Officer, U.S. Naval Medical School, National Naval Medical Center,
Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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Notice to All Military Service Members of the A. M. A.

Each year a large percentage of membership cards sent to military service members are returned to the Membership Department at A. M. A. headquarters because the address is incorrect. Beginning in 1956, service membership cards will not be sent to service members until the member has sent a postcard or a letter informing this office where the card is to be sent. In this way the member will be sure of receiving his membership card, and it will obviate further correspondence in order to try to find out the proper address of the member.

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Reunion at National Naval Medical Center

A reunion of officers attached to the National Naval Medical Center during the period, 7 December 1941 to 15 August 1945, is being planned for the period 10 - 11 November 1956. Mrs. John Harper and LCDR Grace B. Lally (4002 Redden Road, Drexel Hill, Philadelphia, Pa.) are members of a committee to obtain names, addresses, and expressions of interest of former officers attached to the Center.

The Surgeon General has expressed an interest in assisting the committee in planning their reunion.

LCDR Lally will supply interested officers with full details of the planned reunion. (National Naval Medical Center)

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Admiral Burke Heads Navy Mutual Aid Association

The Board of Directors of the Navy Mutual Aid Association, on 17 February 1956, announced the election of Admiral Arleigh Burke, USN, as President. Other officers elected by the membership were Rear Admiral A. H. Van Keuren, USN Ret, First Vice President, Rear Admiral Frank Baldwin, SC USN RET, Second Vice President, and Major General R. E. Hogaboom, USMC, Third Vice President.

Captain T. S. Dukeshire, SC USN RET, was reelected Secretary and Treasurer. All officers and Board members serve without compensation with the sole exception of the full time Secretary and Treasurer.

The Board announced insurance in force in excess of \$107,000,000 and total assets of more than \$30,000,000. A total of 2175 new members joined the Association during 1955, which made it the most successful year in the Association's 77-year history. Some major accomplishments during 1955 were: new plans of insurance offered (paid-up at ages 50, 55, and whole

life; increase in terminal dividend from \$500 to \$1000; age limit raised to 62 years; and extension of services to members and dependents. (Navy Mutual Aid Association)

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From the Note Book

1. Dr. Frank B. Berry, Assistant Secretary of Defense (Health and Medical), recently, in a memorandum to the Secretary of the Navy, commended the Navy Medical Department, the Oakland Naval Hospital, Captain T. J. Canty, MC USN, and Lieut. C.C. Asbelle, MSC USNR, (Inactive) for their extraordinarily fine presentation and participation in the program of the Congress of the Latin American Society on Orthopedics and Trauma, in Mexico City. Rear Admiral B. W. Hogan, MC USN, Surgeon General of the Navy, conveyed his personal congratulations to Dr. Canty, Lieut. Asbelle, and the Commanding Officer of the Naval Hospital, Oakland, as well as an official commendation to them for a job well done. (TIO, BuMed)
2. The Advisory Medical Board of the Leonard Wood Memorial for the Eradication of Leprosy (American Leprosy Foundation), elected Dr. Howard T. Karsner as its Chairman on February 25, 1956. Dr. Karsner, Medical Research Advisor to the Surgeon General of the Navy, has been identified with work of the Memorial for nearly 20 years. (TIO, BuMed)
3. Captain W.M. Silliphant, MC USN, Director of the Armed Forces Institute of Pathology, has been appointed a member of the Board of Editors of the American Journal of Clinical Pathology. The Journal is the official publication of the American Society of Clinical Pathologists. (TIO, BuMed)
4. The dependent medical care bill has been approved by the House Armed Services Committee and sent to the full House for consideration. (TIO, BuMed)
5. On February 17, 1956, the Secretary of the Navy ordered modification of the mission of the U.S. Naval Hospital at Mare Island, Calif. The Hospital will now provide limited general clinical and hospitalization services for shore activities and fleet units present in the Mare Island Shipyard. General clinical and hospitalization services in a limited degree will also be provided for dependents of the Armed Forces and other authorized supernumeraries in the vicinity of the Naval Shipyard. The new operating bed capacity of the Mare Island Naval Hospital has been set at 50 beds. (TIO, BuMed)
6. The Naval Dental School, National Naval Medical Center, conducted a special training course in Use of the Manikin and Other Special Training Aids for Teaching Casualty Treatment for Army and Air Force personnel, February 15 through 17, 1956. (TIO, BuMed)

7. Commander J. L. McCartney, MC USNR (Ret), of Garden City, N. Y., has just published his third book. In his present book, Understanding Human Behavior, Dr. McCartney discusses the foundations of personality and the numerous techniques used by psychiatrists to diagnose and treat maladjusted individuals.
8. Lantern slide sets on Tumor Pathology are available on a loan basis from the Armed Forces Institute of Pathology. These are reproductions of the illustrations published in the various fascicles of the Atlas of Tumor Pathology. A listing of the available sets as well as a loan request form may be obtained from the Director, Armed Forces Institute of Pathology, Washington 25, D. C. (AFIP)
9. Doctors from all over the United States have been invited to attend an Armed Forces Institute of Pathology postgraduate course on diseases of the heart to be held in Washington, D. C., May 14 - 17, dealing with heart diseases from various clinical aspects as well as the pathologic viewpoint. This is another service of AFIP, the central laboratory of pathology for the Armed Forces. (AFIP)
10. The accidental exposure of a group of Marshallese and Americans to radioactive fallout in 1954 necessitated organizing and equipping an emergency medical team to conduct essential laboratory and clinical examinations of the exposed individuals. This report is concerned with the material, facilities, and personnel required for emergency laboratory analyses. (NM 006 012.04.91, NMRI, November 18, 1955)
11. During 7-1/2 years' operation of the Cancer Detection Center at the University of Minnesota, 173 cases of cancer were found during a total of 19,890 examinations performed on 7375 people. This represents one cancer for every 42 people examined (2.3%), and one cancer for every 115 examinations performed. (Surgery, January 1956; C.R. Hitchcock, M. D., W.A. Sullivan, M.D.)
12. A study of 237 pregnancies in women 44 years of age and over is taken from 71,827 pregnancies over a 20-year period. The incidence of pregnancy and the incidence of abortion are shown. The age distribution and outcome of the pregnancy are presented. (Am. J. Obst. & Gynec., February 1956; E.F. Stanton, M.D.)
13. This article reviews experience with acute intussusception and evaluates results with the nonoperative form of therapy for this condition. (Ann. Surg., January 1956; T. V. Santulli, M.D.; J. M. Ferrer Jr., M.D.)

14. The results of a study indicate that Malathion and Chlorthion can be safely used in aerosol form against adult mosquitoes in populated areas. (American Industrial Health, January 1956; D. Culver, M.D., P. Caplan, B.S., G.S. Batchelor, M.S.)
15. The 19th case of primary rhabdomyosarcoma of the heart with autopsy findings is reported in J. Pediat., February 1956; G. Manson, M.D., W. Rindskopf, M.D.
16. The clinical, radiologic, and pathologic aspects of 23 reported cases of pulmonary intracavitary fungous ball are reviewed and the details of 4 new cases presented. (Radiology, January 1956; E.J. Levin, M.D.)
17. Cardiac and intrathoracic vascular surgery has arrived at the point where certain established operations may be safely carried out by the general thoracic surgeon in a non-university hospital. The medical responsibility for the proper handling of such operations is shared equally by internist, surgeon, and anesthesiologist. (Dis. Chest, February 1956; D.J. Dugan, M.D., J.F. Sadusk, Jr., M.D., P.C. Samson, M.D.)

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BUMED NOTICE 6320

3 February 1956

From: Chief, Bureau of Medicine and Surgery
To: All Activities Having Station Hospitals or Dispensaries
Subj: Professional care of patients

This notice encourages medical officers in addressee activities to seek early consultation in cases where major difficulties might be encountered.

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BUMED INSTRUCTION 1520.8

6 February 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Officers of the Medical Corps Regularly Assigned
Subj: Short postgraduate courses for medical officers; guidelines for Bureau defrayment of travel and per diem expenses

This instruction provides guidelines for attendance at short postgraduate courses. BuMed Notice 1520 of 15 December 1955 is canceled.

BUMED NOTICE 6700

10 February 1956

From: Chief, Bureau of Medicine and Surgery
To: All Stations Having Medical Personnel Regularly Assigned
Subj: Emergency aspirator for ambulances; Beneficial Suggestion
No. 416 from the National Naval Medical Center, Bethesda, Md.
Encl: (1) Diagram of emergency aspirator for ambulances

The purpose of this notice is to provide addressees with information on subject beneficial suggestion.

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BUMED INSTRUCTION 6710.27

15 February 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations
Subj: Defective medical and dental material; authority for disposition of
Ref: (a) Medical and Dental Materiel Bulletin, Edition No. 63 of
1 Feb 1956
(b) Art 25-21 ManMed

This instruction provides authority for disposal of defective material listed in paragraph IV of reference (a).

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BUMED NOTICE 6710

17 February 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel
Assigned
Subj: FSN 6505-149-1720 Water for Injection, USP, 1000 cc. 6's;
precautions concerning

This notice directs the attention of all Medical Department personnel to certain hazards inherent in the labeling of subject item.

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BUMED NOTICE 6710

23 February 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel
Regularly Assigned

Subj: Antibiotics; extension of potency dates

Ref: (a) Medical and Dental Materiel Bulletin (MDMB) Editions No. 61
of 1 Dec 1955, No. 62 of 1 Jan 1956, and No. 63 of 1 Feb 1956

This notice provides authority to extend the potency dates of certain antibiotics

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BUMED INSTRUCTION 12250.1A

27 February 1956

From: Chief, Bureau of Medicine and Surgery
To: Activities Under the Management Control of BuMed

Subj: Ungraded position ratings; current maintenance review of

Ref: (a) NCPI 250.3-6
(b) NCPI 250.3-7
(c) NCPI 250.3-8

This instruction provides instructions supplemental to NCPI 250 concerning the annual maintenance review of ungraded positions and secures necessary reports of accomplishments. BuMed Instruction 12250.1 of 2 February 1953 is canceled.

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BUMED INSTRUCTION 5101.2

28 February 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly
Assigned

Subj: Nonstatic blankets; use of in areas employing oxygen or anesthetics

This instruction advises addressees of the availability of nonstatic cotton blankets.

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DENTAL**SECTION**Plane Crashes and Dental Records

The recent story of the Marine Corps plane that crashed in California in which the manifest listed the names of passengers who were actually on another plane, highlights a little known, but important, function of the dental officers on duty at the Dental Division and the importance of accurate dental records in identification of the dead.

When the list of the names aboard the ill-fated plane reached the Bureau of Medicine and Surgery late on the night of the 17th of February 1956, the BuMed duty officer called the Dental Division duty officer, Captain E. E. Jeansonne, DC USN, and made arrangements to obtain the dental records from the Physical Qualifications and Medical Records Division. When the records were obtained, Captain Jeansonne, assisted by Captain R. D. Wyckoff, DC USN, began their examination of the dental records of those reported aboard the plane. The transfer of the data on the dental records from Washington to California, so that positive identification could be made, was accomplished by telephone between BuMed dental officers and the dental duty officer of the U.S. Naval Hospital, Oakland, Calif., Commander W. A. Nelson, DC USN. It is interesting to note that the transfer of the dental markings on the records took only an average of about two minutes per person. This is remarkable when the number of dental markings on the chart of the average person is considered and, also, that a translation of markings and tooth numbering had to be made in some cases because of the differences between old and new type dental records. Altogether, the three dental officers involved worked through the night in this effort of positive identification which is so important to the next of kin and for the settling of estates. The following day, when the error in the passenger listing was discovered, this effort was repeated when Captain J. T. Mudler DC USN, who assumed the Dental Division duty, examined the new records and transferred the information to Lieutenant (JG) J. R. Law, DC USN, on duty at the Oakland Naval Hospital.

This story should be kept in mind by all dental officers when dental records are made. Often, the teeth are the only way by which identification can be established. The importance of accurate markings on the dental record plus prompt submission of records to the Bureau cannot be overemphasized.

Naval Reserve Dental Companies

Listed below are Naval Reserve Dental Companies established in the various naval districts that are composed entirely of dental students who are commissioned Ensigns (1995):

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|-----------------------------------|-----------------------------------|
| Naval Reserve Dental Company 3-10 | New York University |
| Naval Reserve Dental Company 4-8 | Temple University |
| Naval Reserve Dental Company 4-9 | University of Pennsylvania |
| Naval Reserve Dental Company 4-10 | University of Pittsburgh |
| Naval Reserve Dental Company 4-11 | Ohio State University |
| Naval Reserve Dental Company 4-12 | Western Reserve University |
| Naval Reserve Dental Company 5-6 | Medical College of Virginia |
| Naval Reserve Dental Company 6-12 | University of Tennessee |
| Naval Reserve Dental Company 6-13 | Emory University |
| Naval Reserve Dental Company 8-4 | Loyola University (New Orleans) |
| Naval Reserve Dental Company 11-2 | University of Southern California |
| Naval Reserve Dental Company W-2 | Georgetown University |

Listed below are Naval Reserve Dental Companies established in naval districts having Ensigns (1995) on roster:

| | |
|------------------------------------|-----------------------|
| Naval Reserve Dental Company 3-2 | New York City, N. Y. |
| Naval Reserve Dental Company 9-6 | Evanston, Ill. |
| Naval Reserve Dental Company 9-9 | Iowa City, Iowa |
| Naval Reserve Dental Company 9-11 | St. Louis Mo. |
| Naval Reserve Dental Company 12-1 | San Francisco, Calif. |
| Naval Reserve Dental Company 12-12 | Oakland, Calif. |

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Medical and Dental Professional and Technical Books -
Procurement of

The attention of dental activities is directed to BuMed Instruction 6820.4C of 10 February 1956. The purpose of this instruction is to inform addressees of the procedure to be followed in the procurement of professional and technical medical and dental books. BuMed Instruction 6820.4B is superseded and canceled by this instruction.

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Procurement for Ensigns (1995) from Class of 1959

A Naval Recruiting Note was sent out from BuPers to all offices of Naval Officer Procurement on February 17, 1956, directing them not to accept any more applications from dental students in the freshman class for this program after that date. After applications now received from this class are processed, there may be some vacancies, and if so, procurement will be reopened on a quota basis. This program was closed to members of the sophomore, junior, and senior classes by earlier action.

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First Naval District Medico-Dental Symposium - March 1956

The First Naval District Medico-Dental Symposium for the Armed Forces was conducted at the U.S. Naval Hospital, Chelsea, Mass., March 21 - 23, 1956. Rear Admiral Ralph W. Malone, DC USN, Assistant Chief for Dentistry and Chief, Dental Division, Bureau of Medicine and Surgery, and Captain T. DeWitt Allan, DC USN, District Dental Officer, First Naval District, participated in the program.

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Establishment of Naval Dental Clinic in Philadelphia

SecNav Notice 5450 of 15 February 1956, establishes the U.S. Naval Dental Clinic, U.S. Naval Base, Philadelphia, Pa., under a commanding officer, and as a component of the U.S. Naval Base, Philadelphia. The Clinic is under the management control of the Bureau of Medicine and Surgery and under the military command of Commander, U.S. Naval Base, Philadelphia.

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MEDICAL RESERVE SECTION

New Application Forms for Correspondence Courses

The enrollment in Naval Correspondence Courses has swelled to such a number that procedures for processing applications must necessarily be geared to volume handling. To this end, the application forms requesting

enrollment in officer and enlisted courses have been revised to simplify enrollment at the Naval Correspondence Course Center, Brooklyn, New York, and the Naval Medical School, Bethesda, Md. When applying for correspondence courses, Medical Department Reservists are requested to use only the following forms:

Officer Courses: Application for Enrollment in Officer Correspondence Course, NavPers 992 (Revised 10/54) or, forthcoming forms with revision date later than 10/54.

Enlisted Courses: Application for Enrollment in Enlisted Correspondence Course, NavPers 580.

All Naval activities have been directed to discontinue use of, and destroy all stocks of, the following application forms: Form 992 with revision dates of 10-46, 4-47, 12-49, 9-50, and 9-51, and Form NavPers 977.

Stocks of NavPers 580 and NavPers 992 (Rev 10/54) may be requisitioned from the District Publications and Printing Offices.

(BuPers Notice 5213 dated 31 Jan 1956)

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Special Clinical Services - Blood

The correspondence course, Special Clinical Services (Blood), NavPers 10998, was made available to regular and Reserve personnel of the Armed Forces Medical Departments in July 1954. This course has received high praise from those who have taken it. Among these are physicians who are directors of blood banks, chairmen of special committees on blood transfusions, members of the American Board of Internal Medicine, and the Society of the Study of Blood.

The object of the course is to acquaint Medical Department personnel with the basic principles and techniques involved in the preparation and administration of blood and blood substitutes, the collection and storage of blood, the preparation of plasma, and laboratory procedures including blood grouping and crossmatching. This course, while increasing the enrollee's knowledge of the field of blood transfusion, also provides an incentive to further study and research, and provides background information for students preparing for residencies or for postgraduate work. It may also serve as a guide to physicians and technicians in operating blood and plasma banks and in organizing and operating transfusion services.

Since the beginning of World War II, the therapeutic use of blood and its derivatives has greatly increased. Research and technical developments

leading to the successful establishment of blood banks have made it possible for hospitals and medical centers throughout the world to process, ship, and store blood and its derivatives for future therapeutic use. The consequent availability of blood to the doctor and surgeon has led to broad changes in medical and surgical practice. The percentage of beneficial results from the use of blood in cases of congenital and acquired anemias has risen markedly. Many doubtful cases have been re evaluated as excellent prospects after a course of transfusions and subsequently have been cured by surgery. Literally hundreds of lives have been saved by prompt replacement transfusions in cases of hemolytic disease of the newborn. Likewise, the mortality in cases of trauma, shock, and routine surgery has been greatly reduced. Mortality in combat casualties has been reduced by more than 50% through the therapeutic use of plasma by physicians and hospital corpsmen.

Two textbooks are required to complete this course: Blood Transfusion by DeGowin, Hardin, and Alsever covers the whole field of blood transfusion. The other text, Special Clinical Services (Blood), NavPers 10866, prepared by the Bureau of Medicine and Surgery, is a brief but comprehensive description of the clinical use of blood and the techniques involved in the procedures necessary for its use. All text material is supplied to enrollees.

Eligible officers and enlisted personnel, regular and Reserve, of the Medical Department may enroll in this course. Applications should be submitted on Form NavPers 992 (with appropriate change in the "To" line) and forwarded via appropriate channels to the Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md.

This course consists of eight (8) assignments of the objective question type and is evaluated at twenty-four (24) Naval Reserve Promotion and Non-disability Retirement points. Completion of this course provides Naval Reserve officers with an additional means of earning non-disability retirement and promotion point credit, and regular Navy personnel with an alternate method by which they may, in part, qualify for promotion.

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New England Hospital Assembly Approved for Point Credits

The New England Hospital Assembly sessions, 26, 27, and 28 March 1956, at Boston, Mass., will mark its 35th anniversary year. Founded in 1921 as the New England Hospital Association, the NEHA was the first regional hospital organization in the United States.

Each year attendance at the annual assembly has grown. Last year nearly 6000 attended the three-day meetings. Expectations are that the 1956 sessions will see this attendance record broken.

There will be three sections in the 1956 Assembly: General Sessions, Instructional Conferences, and Section Meetings. Top-flight speakers and discussants in all sessions are expected to attract capacity audiences.

Eligible inactive Reserve Medical Department officers who attend will earn retirement point credits provided they register daily with the military representative at the Assembly who is authorized to record such attendance. Appropriate duty orders are not required.

The complete program and full information may be secured by writing to the District Medical Officer, First Naval District, 495 Summer Street, Boston 10, Mass.

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PREVENTIVE MEDICINE SECTION

The Otologist's Role in an Industrial Hearing Conservation Program

An industrial hearing conservation program, to be successful, requires the cooperation of management, workers, and health and safety personnel. The otologist who interests himself in the many facets of occupational hearing loss can play a key role.

Each plant has an individual noise problem and the program should be tailored to the needs of the particular plant. It should not be too costly nor require the worker to be absent from work too long. A suitable room and a pure tone audiometer are required for testing. Speech reception, discrimination tests, and bone-conducting thresholds require optimum testing conditions. These tests should be performed in the otologist's office. The plant hearing tests may be performed by trained and interested personnel of the plant. Interpretation of audiograms should be done by the medical man.

If significant hearing loss is detected at the time of hiring, the worker must be carefully examined and placed after thorough hearing studies. Careful distinction between conductive, perceptive, and mixed types of hearing loss is important in placing workers. The otologist also must detect wilful exaggeration of either hearing ability or hearing loss by workers.

The otologist also participates in the medicolegal aspects of hearing claims. The status of the employee's hearing at time of hiring is of critical

importance in cases of claim for hearing loss. Employers should require routine audiometric tests as part of pre-employment physical examinations. The choice of formula for evaluating hearing test results in terms of percentage of hearing disability is controversial. The problem of permanency of hearing loss is difficult to solve. Appropriate allowances should be made for hearing loss which can be expected in normal aging.

A hearing conservation program begins with a thorough study of noise levels found in various working areas. Areas which reveal sound levels, that are potentially damaging, are studied in more detail to determine intensity, duration, and frequency characteristics of the over all sound pattern. The otologist's contribution to such a program can be judged by the extent to which he helps to achieve the following three major objectives: (1) to conserve the hearing of the workers; (2) to avoid unnecessary economic loss to the employer; (3) to collect data which will enlarge the knowledge of the defects of industrial noise and how they can be overcome. (V. Lindsay, 1954-1955 Series: Year Book of Eye, Ear, Nose and Throat; Fox, M.S., Otologist's Role in Industrial Hearing Conservation Program: Laryngoscope, 64: 79-88, February 1954)

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Foodborne Disease Outbreaks

Although foodborne disease outbreaks have diminished in the past several years, enough cases are still being reported to cause concern. For instance, over 3000 Naval and Marine Corps personnel were treated during the calendar year 1955 for diseases caused or suspected of being caused by contaminated food. It is easy to understand why more emphasis should be placed on the prevention of these outbreaks when they are broken down to man-hour loss. An average of 2 days were lost by each of the 3000 patients with reported cases—a total loss of approximately 48,000 man hours.

The type of food associated with these outbreaks varies considerably. Poultry and poultry dishes were connected with approximately 20% of the total cases. Other foods in their order of importance include pork products, beef products, various salads, puddings, and fresh oysters. It is of interest to note also that 29 men were treated for metallic poisoning. These men consumed orange juice from a container which, upon being tested, revealed the presence of cadmium.

By far the most common discrepancy is noted in the investigation of these outbreaks were the lack of proper supervision and food-service training programs. Next in order, were improper refrigeration and unsatisfactory or inconvenient handwashing facilities. A good example of improper supervision over food-service personnel was demonstrated recently aboard a ship in the Atlantic fleet. In this instance, two isolated epidemics of

foodborne illness occurred within 5 days, one involving 15 men and the other 25. The first outbreak was caused by contaminated roast pork and the second by hot turkey sandwiches. The only common factor involved was considered to be a contaminated cutting board. Had proper supervision over food-service personnel and adequate food-service training been accomplished, this outbreak might have been avoided.

The medical officer or Medical Department representative is responsible for making recommendations necessary to safeguard the health of personnel. Sanitary supervision over food-service operations and surveillance of the daily nutritional adequacy of diets is a very important and exacting duty which confronts the Navy Medical Department. In addition, the health and personal hygiene of all food-service personnel must be considered.

Medical officers should maintain constant surveillance over food-service operations and food-service training, and utilize environmental sanitation technicians to the fullest extent possible in conducting and supervising the training program. The following Bureau of Naval Personnel aids, developed with the collaboration of the Bureau of Medicine and Surgery and the Office of the Surgeon General, U.S. Air Force, will provide an excellent guide to the instructor in conducting food-service training courses:

1. NavPers 91921A - Instruction in Sanitary Precautions for Food-Service Personnel (1956 Revision).
2. NavPers 230074 - Flip Charts for Training Food Service Personnel, 1956.

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The TPI Test in the Navy

The Treponema pallidum Immobilization Test for Syphilis (TPI test) measures the presence of the treponemal immobilizing antibodies which, according to current evidence, develop only in response to treponemes in the body. These antibodies usually develop at some time between the "Early" and "Early Latent" stages of syphilis, and, once they have developed, the individual's TPI reaction remains positive for life, regardless of future treatment. However, if treatment is instituted in the "Early" stage before TPI antibodies develop, these antibodies may be prevented from developing and the TPI test from this infection will never become positive.

Therefore, a positive TPI reaction indicates that the individual most probably had a treponematoses at some time in the past, though it may even not be indicated by the present or recent signs, symptoms, and standard serology. This treponematoses may have been yaws, pinta, or bejel, as well as syphilis; however, in an individual who has never left the United

States, syphilis is most probably the cause of the positive TPI test. Bejel would be considered strongly only in one who had lived among the Arab nations, and pinta could be considered a possibility in Negroes and Indians who had lived in Central America, South America, or the tropics.

When standard serological tests are negative and the TPI positive, the patient usually has treated late syphilis or one of the other treponemal infections.

When negative results are obtained to both the standard serologic test and the TPI test, two possibilities are present, namely: (1) that the individual has never had syphilis, or (2) that, if the individual has had syphilis, the disease was treated in its very early stages so that the TPI antibodies never developed.

When the standard serological tests are positive and the TPI negative, the patient is usually a biologic false positive reactor; rarely, he may have had treated early syphilis. The frequency of the occurrence is illustrated by the fact that within the past 6 months 90 instances of biologic false positive reaction were revealed by the TPI tests performed at the Naval Medical School.

A repeated positive TPI test is more specific evidence of treponemal infection than a repeated positive standard serologic test.

The Sixth Army Medical Laboratory, Fort Baker, Calif., performs the TPI tests requested by the Pacific Fleet and by the Naval Forces in the Far East, the Philippines, the Marianas, the Territory of Hawaii, Alaska, and the States of California, Oregon, and Washington. The TPI Laboratory, Naval Medical School, National Naval Medical Center, Bethesda 14, Md., performs the TPI test for all other naval activities. NavMed Form-1351 has been used to request this test; however, as soon as present supplies are exhausted, the new DD Form-876 will be used by the Navy, as well as the other branches of the Armed Forces.

When all the following conditions exist, a TPI test should be performed before a diagnosis of syphilis is established: (1) Two standard serologic tests on blood drawn 5 to 7 days or more apart are doubtful or positive; (2) There is no history of previous diagnosis for syphilis; and (3) There are no current signs or symptoms of primary or secondary syphilis, and there is no definite clinical evidence of late syphilis in any form.

The results of each TPI test shall be entered in the individual's health record on Standard Form-602.

The TPI test has proved to be a new invaluable aid to the clinician in both diagnosing and excluding the diagnosis of syphilis. The occurrence of false positive standard serological tests has already been mentioned, but it is again emphasized that it is also possible for a patient to have false negative STS reactions as the reagin titre falls to levels that cannot be detected following treatment, whereas the immobilizing antibody of the TPI remains at a high titre for life.

American Academy of Occupational Medicine -
Notes on Annual Meeting

The American Academy of Occupational Medicine held its Eighth Annual Meeting, celebrating the Tenth Anniversary (1946 - 1956) of the founding of the Academy at the Netherland Plaza Hotel's Pavillion Caprice in Cincinnati, Ohio, February 15, 16, and 17, 1956. Honors were given to charter members with special tribute to Doctor George H. Gehrmann, one of the founders and the first President.

The scientific sessions consisted of a review of the organ systems by specialists in each field. Discussions were presented concerning the signs and symptoms that are the result of influences in the working environment. Particular attention was given to the findings that are indicative of occupational diseases. Special considerations on history of exposure and effective dose were included in the presentations. The skin, respiratory, circulatory, hemopoietic, liver, gastrointestinal, genito-urinary, and central nervous systems were reviewed.

Routine programs of investigation were described as well as special services that are available to industry from private laboratories, local and state health departments, and Federal agencies. An afternoon was set aside for field trips to the Robert A. Taft Sanitary Engineering Center, the Occupational Health Field Headquarters of the Department of Health, Education, and Welfare, Public Health Service, and the Kettering Laboratory, University of Cincinnati Medical School.

The Academy's Annual Dinner and the First George H. Gehrmann Lecture were held in the ballroom of the Cincinnati Club. Following the dinner, Doctor Frank Princi, President of the American Academy of Occupational Medicine, introduced the speaker, Mr. Emile F. DuPont, Director, E. I. DuPont de Nemours and Company, Incorporated, Wilmington, Del. Mr. DuPont traced the development and history of the occupational health program in his company over the past 40 years. He paid high tribute to Doctor Gehrmann who served with the company during that period.

Following Mr. DuPont's address, Doctor Gehrmann made a few remarks expressing deep gratitude for the honors bestowed upon him. He called attention to others such as Doctor Robert A. Kehoe and Doctor James H. Sterner who have worked hard over many years in raising the standards of occupational medical practices.

The final scientific sessions on the last day of the meeting covered the clinical effects associated with heliarc welding, the diagnosis and treatment of back pain and evaluation of ability to work, and the treatment of methemoglobinemia.

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Progress Report on the Manual of Naval Preventive Medicine -
NavMed P-5010

Chapter 1, Food-Service Principles, has been cleared and forwarded to the Government Printing Office for publication. It is anticipated that Chapter 1 will be distributed to the field some time in April.

Chapter 2, Sanitation of Living Spaces and Related Services, is being circulated to interested divisions of the Bureau of Medicine and Surgery and to other bureaus and offices and will be returned to this Bureau by March 20. This chapter should be completed and sent to the Publications Division, Bureau of Medicine and Surgery, for possible distribution in May.

Chapter 3, Ventilation and Thermal Stress Ashore and Afloat, has been cleared through all bureaus with major changes recommended. Consequently, distribution of this chapter will be delayed probably until July or August.

A draft of Chapter 4, Swimming Pools and Bathing Places, has been cleared and distribution in early May is in prospect.

A draft of Chapter 5, Water Supply Ashore, has been completed and is ready for reproduction prior to clearance through interested bureaus. The anticipated distribution date of this chapter is early August.

Chapter 6, Water Supply Afloat, is in the process of being written and requires additional information on the problem areas prior to completion. No distribution date for this chapter is in sight at this time.

Chapter 7, Sewage Disposal, is in the process of reproduction and should be sent out for review and comments with the suggested return date of 1 May. Distribution of this chapter in early August is anticipated.

Chapter 8, Refuse Disposal, requires extensive work for completion. Clearance is anticipated by 1 August with distribution in September or October.

Data and information are being assembled for the rough manuscript of Chapter 9, Insect and Vector Control. Distribution of this chapter late in 1956 is in prospect.

Chapter 10, Insecticides and Dispersal Methods, was distributed in 1953. A reprint of this chapter has been requested and is available upon request to the appropriate District Publication and Printing Office.

The title for Chapter 11 has not been definitely established, but Medical Statistics is being considered.

A draft of Chapter 12, Field and Emergency Sanitation, is in the process of clearance through other bureaus. It is anticipated that, if major changes are not recommended, this chapter will be distributed by August.

Additional chapters are contemplated on Communicable Disease Control and Immunization and Occupational Health.

When Chapter 1 is distributed, information will be published on procedures for requesting chapters by interested individuals. The planned

distribution for each chapter has been to all ships and stations with a Medical Department representative. Any information or inquiries regarding the Manual of Naval Preventive Medicine should be directed to the Chief of the Bureau of Medicine and Surgery, Attention: Code 72.

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Industrial Health and Accidents in England

The following item, which appeared in the April 9, 1955 issue of the Journal of the American Medical Association, should be of interest to naval industrial medical personnel as it shows the similarity between industrial health and accident problems in England and problems in U.S. Navy industrial activities.

"The Chief Inspector of Factories reports that the number of accidents in industry in 1954 shows an increase over that in 1953. The number of fatal accidents, however, fell from 796 in 1953 to 744 in 1954. Several factors contributed to the rise in the number of accidents, such as the increased number of man hours worked and the increase in mechanical processes undertaken by women workers. The Chief Inspector is concerned over the increased number of accidents to young people. Lack of proper instructions is the greatest cause of machine accidents, although employees must share the blame with employers. Better discipline and closer supervision would prevent those avoidable tragedies that result from youthful high spirits. Referring to ocular injuries, attention is drawn to the difficulty of getting workers to use protective devices, whether required or not by law. The attitude of management is important. They must treat the matter with the utmost seriousness and this attitude must be passed on to employees. The law states that employers not only must take all precautions and provide protection against accidents, but also must exert all due diligence to see that precautions and protection are employed. Some factories stamp job cards with appropriate reminders and others have used intensive propaganda campaigns. More rigorous legislation is needed to prevent ocular injuries which numbered 7738 in 1954. Although, in many factories first aid equipment is in excess of that required by law, in too many others the equipment consists of small tin boxes covered with rust and dirt, containing a few grimy remnants. Similarly, the standard of first-aid attendants varies widely. All factories employing more than 50 workers are required to have personnel trained in first aid, but the training is not defined. Factory inspectors have increasing difficulty in getting volunteers for first-aid duties even when there is monetary inducement, and factory managements have been warned of the importance of first aid.

The report also draws attention to the difficulty of persuading employers and workers of the necessity of a high standard of cleanliness, even when the trade is a 'dirty' one. Too often, dirt and rubbish are allowed to accumulate and are cleaned up only periodically. As a rule, larger factories are cleaner and better maintained than smaller ones, and some of the cleanest factories are those in which the work is 'dirtiest.' More and more factories are installing modern systems of heating, but in many, lighting and heating methods are still obsolete. In designing new factory buildings, more consideration should be given to ventilation and heating. Health is not merely a matter of protection against injury and disease. The worker should not be looked on as a unit or clock number, but as a human being, and there is evidence that factory managements are aware of the need for promoting mental as well as physical health in their employees. "

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Permit No. 1048

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